

CENTRAL INTELLIGENCE AGENCY

REPORT

INFORMATION REPORT

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COUNTRY USSR (Ukrainian SSR)

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SUBJECT Kurakhov GRES Power Plant
at Kurakhovka (Roya)

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1. The Kurakhov-GRES (State District Power Plant) near Kura-
khovka (47°39'N/37°18'E), Ukrainian S.S.R., suffered serious war
damage. * In March 1945, the buildings were still destroyed and
the machinery not operational. The reconstruction was supervised
and directed by Samislov (fru), who turned the reconditioned
plant over to plant director Khokhryakov (fru).
2. The first stage of the reconstruction was completed about December
1948, with two turbines and four boilers in operation. The re-
construction generally followed the previous layout and dimensions
of the plant. The first turbine was started in December 1946, and
the second one followed in September 1947. These turbines had been
dismantled in Wechtal near Reuthen (L 51/V 58). Each of them had
a capacity of 50,000 kw.
3. The second stage of construction followed and was 95 percent com-
pleted in December 1949. This section 25X1
of the power plant was also being equipped with two turbines and
four boilers. One of the turbines was completed in July 1949, and
the other one was expected to be completed by late January 1950.
Three boilers were in operation, and the frame work was set up for
the fourth one, which was to be completed by March 1950. The
turbines in this section were of AEG make and had a capacity of
50,000 kw each. All the turbine equipment in this section had also
been dismantled in Wechtal near Reuthen.
4. One "IBC turbine" with a capacity of 50,000 kw was dismantled and
evacuated to the rear at the beginning of the war. This
turbine has not been returned.

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5. As the old plant, which was destroyed during the war, had only two turbines and four boilers, the turbine and boiler house had to be extended to the west to install the two additional turbines and the four additional boilers. Auxiliary buildings were also extended to the west. The turbines and boilers were numbered consecutively from east to west. The required construction work necessitated the lapse of time between the starting of the second and the third turbine.
6. The lack of detailed sketches complicated the assembly. One general plan only was available, and all detailed sketches had to be prepared. Even though the complete installation of the Mechtal power plant was presumably dismantled, misdirected shipments and the damage to material caused by bad weather and improper handling resulted in a shortage of many parts, such as ball mills, blowers and 80 percent of the boiler parts. The missing parts had to be manufactured in the auxiliary workshops.
7. After the completion of the second section of the main building, all damaged auxiliary installations were rebuilt. The construction of a second dam farther downstream was also started during this period. This dam was being constructed to raise the water level about 3 meters; the raised water level was required for the construction of the plant's third section, which was to be started in 1950. Plans or sketches for this third section were not yet available. More turbines and boilers were to be installed to increase the total plant capacity from 200,000 kw to 400,000 kw. Two Soviet turbines with a capacity of 100,000 kw each, and five large Soviet boilers were to be installed.
8. The Karakhov GRES, before the war already one of the important sources of power in the U.S.S.R., was to become one of the largest and most modern installations of its kind and the first high pressure power plant in the U.S.S.R.
9. All eight boilers available at the power plant in 1949 were of the same type. They were high capacity radiation boilers of the Babcock Firm in Oberhausen (K 52/A 32), and were designed for fueling with coal dust. Each one had a heating surface of 800 square meters, a working pressure of 80 atmos., and a super heat of 500°C. Each boiler consumed 20 tons of coal per hour and generated about 120 to 140 tons of steam during the same time. It was planned that two boilers would be operated for one turbine, but changes were possible. Until December 1949, three turbines were driven by seven boilers. This 25X1
- Improvement facilitated the collection and disposal of the slag in liquid condition. Thus ash dust and crusts on the boiler walls were eliminated. The flowing slag was utilized for a further increase of capacity.
10. The boilers No 1 to 5 and No 7 each had two pulverizers (Kugel-muehle), grinding the coal to dust for fueling. The pulverizers were constructed at the Babcock Firm and were called Babcock tube mills. They operated with 21 rpm and had a capacity of 17 tons of coal per hour. Boilers No 6 and 8 each had two Soviet pulverizers of the "Sha 16" type constructed at the Kamenski (sic) Firm in Podolsk (55°23'N/37°50'E). These pulverizers ground 24 tons of coal per hour. Each of the two inclined hoists transported 270 tons of coal per hour. Each boiler was equipped with

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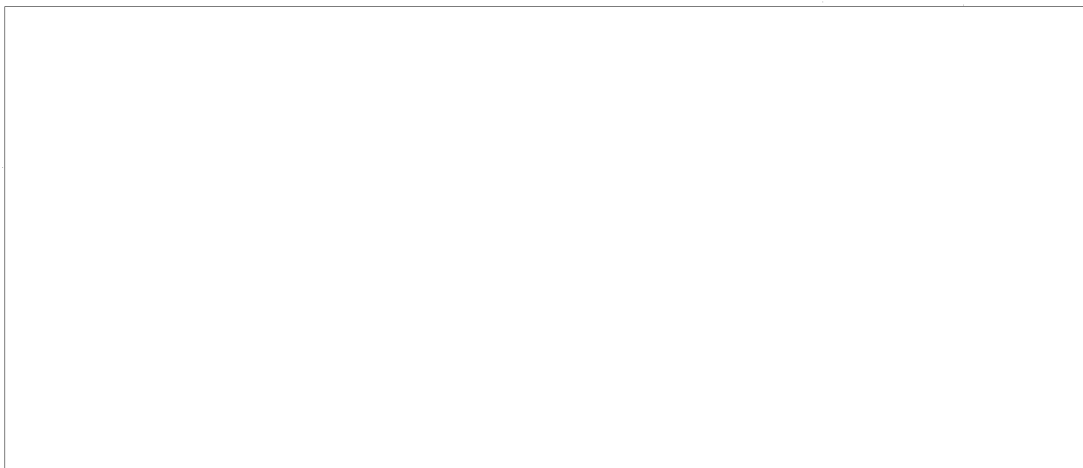
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two blowers (exhaustor) on the stoker's platform. These blowers sucked in the coal dust and blew it into the fire. Boilers No 1 to 5 had German blowers, and the other boilers were fitted with Soviet types. Each boiler was fitted with two German ventilators to supply warm air.

11. The coal gases were purified by eight electric filters made by the Lurgi firm in Frankfurt/Main. The plant had a total of 11 suction draughts (Saugzuger). Five of these draughts, constructed at the Babcock Plants, were fitted to five different boilers. The other six suction draughts were of Soviet origin. Two were fitted to each of the remaining three boilers.
12. The turbines were of the two-stage type with a high pressure stage utilizing steam at 78 atmos. and 500°C super heat, and a low pressure stage. Including the generator the turbines were 21 meters long and 4 to 5 meters wide. Each turbine was fitted with three tapping points for steam with a pressure of 1, 3, and 23 atmos. This steam was mostly used for central heating.
13. All turbines were in operation at the same time. There were no long interruptions in their operation. The plant supplied power in various voltages up to 100,000 volts. The 100,000 volt power was delivered to the Donets basin.
14. The reservoir had a total length of about 8 km and an average width of 1 km. The first dam, a concrete structure located farther upstream, existed in 1945. The dam was equipped with gates. A second dam was still under construction with sand and earth being piled up. A railroad bridge crossed the reservoir upstream from the first dam. During the same period apartment houses, a school, a hospital, and other public buildings were constructed in the vicinity.
15. The work force of the power plant [redacted] estimated. In addition to 800 P's, at least the same number of Soviet men and 25X1 women worked in the day shift during 1949. [redacted] about 300 laborers worked in each of the two night shifts. All [redacted] were withdrawn on 23 December 1949. More civilians were [redacted] assigned to the plant to work on the construction of the third 25X1 section of the main building. All German engineers working at the power plant were P's. ** 25X1



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